

assembling said adherends one on top of the other so that the joint surface of one said adherend faces the joint surface of the other said adherend defining a joint region therebetween, said extending reinforcing elements interticially disposed in said joint region; and

disposing an adherent within said joint region about said interticially disposed reinforcing elements and said joint surfaces.

#### REMARKS

The applicant appreciates the Examiner's thorough examination of the application and requests reexamination and reconsideration of the application in view of the preceding amendment and the following remarks.

The Examiner rejects the claims (after the applicant filed an appellant brief) based on the newly cited references Born, the 783035 publication, and Holko. Each new reference is discussed in turn.

Born discloses joining the ends of thin rods by grinding each rod to a taper and exposing the fibers. The rods are then overlapped and glued together. A heat shrink tube may also be placed over the joint region. In contrast, the applicant claims, not grinding to expose fibers, but disposing (inserting) a plurality of reinforcing elements through the thickness of each composite part. The reinforcing elements are left extending at the joint region and interlock within the adherent to form a very strong joint.

Born teaches grinding to expose the fibers of a rod; applicant claims inserting reinforcing elements and leaving them extending. Born teaches away from this claimed feature since any grinding would grind the reinforcing elements flush and the applicant specifically claims that the reinforcing elements are left extending. Were reinforcing elements actually disposed through the thickness of Born's thin rods (probably impossible), the subsequent grinding operation would render them useless. Born teaches only the joining of thin rods since he specifically teaches using a heat shrink tube over the joint between two rods. This tapering operation by grinding is not applicable to composite parts other than long thin rods.

The 783035 publication relates to joining the ends of a conveyor belt. Longitudinal cables in the belt are exposed and a butt joint of overlapped cables is formed.

Inserting reinforcing elements through the thickness of these flexible belts is neither taught nor suggested since the very idea would be antithetical to standard engineering practices relating to flexible belts.

Extending reinforcing elements through the thickness of a belt and/or a belt joined to another belt by placing one belt on top of another (see claim 24) would render the belt inoperable on a conveyor. This is why the 783035 publication teaches joining the ends of the conveyor belts. There is no discussion or suggestion relating to inserting reinforcing elements through the thickness of the belt as

claimed by the applicant.

Holko does teach joining composite materials (one "adherend" placed on top of the other "adherend") so Holko is analogous art, but it is the prior art shown in Fig. 1 of applicant's specification. It is this art which the applicant improves upon in the claimed methodology.

The Examiner states that Holko teaches disposing a plurality of reinforcing elements through the thickness thereof. This is not true. Composite parts inherently comprise fibers in a resin matrix. Holko, column 1, lines 14-30. See also the Engineer's Guide to Composite Materials and Engineered Materials Handbook. See also Born, column 1, lines 10-14.

Neither Holko nor Born, however, teach the applicant's extra step of disposing or inserting additional reinforcing elements through the thickness of a composite part which already contains fibers in a resin matrix, and leaving them extending, and placing them on top of each other at the joint region, and interticially disposing them in the joint region, and disposing an adherent about the extending reinforcing elements.

The applicant's specification clearly defines the language "disposing reinforcing elements through the thickness of each composite adherand", see Figs. 11-14, and the art cited fails to teach or suggest this step. Before the present invention, the applicants use to grind the extending reinforcing elements flush! See Boyce. It was

not until this invention that the applicant's discovered that by leaving the reinforcing elements extending, a stronger joint between the two parts could be fabricated.

Applicant has added new claim 24 which makes it clear that the reinforcing elements are disposed through the thickness of each adherend already containing longitudinal fibers in a resin matrix. The reinforcing elements are disposed transverse to the longitudinal fibers. See claim 24. No art teaches this step when joining two parts.

Accordingly, the applicant's claims are patentable over Born, Holko, and the 783035 publication.

Each of Examiner's rejections has been addressed or traversed. Accordingly, it is respectfully submitted that the application is in condition for allowance. Early and favorable action is respectfully requested.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned or his associate, Joseph S. Iandiorio, collect in Waltham, Massachusetts, (617) 890-5678.

Respectfully submitted,



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